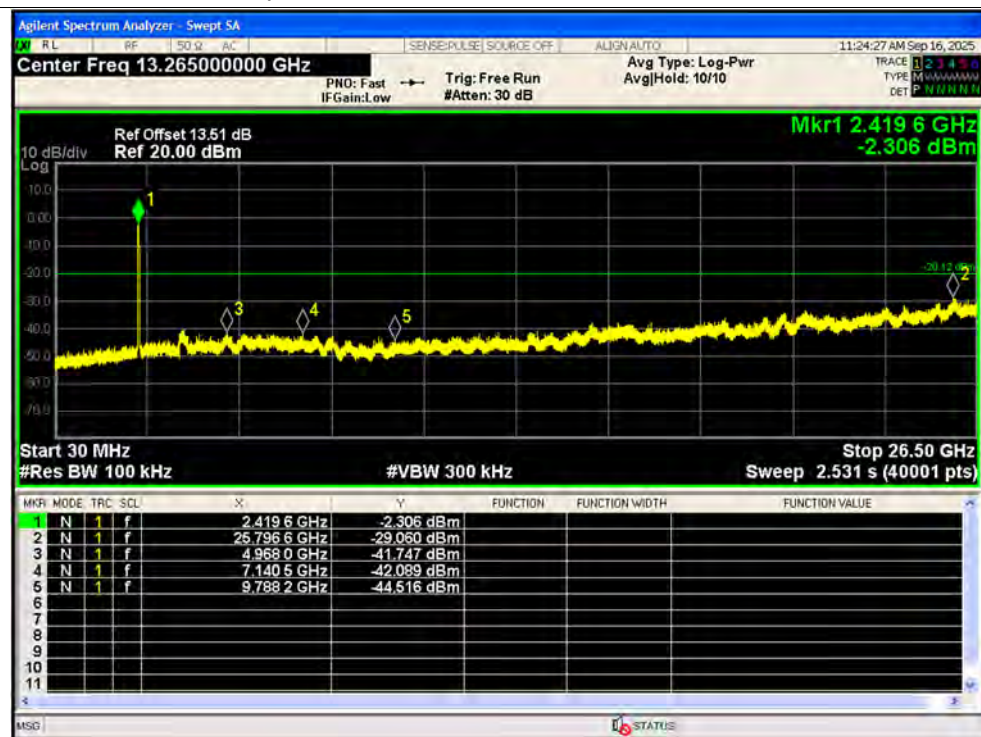


Tx. Spurious NVNT ac40 2422MHz Ant1 Ref



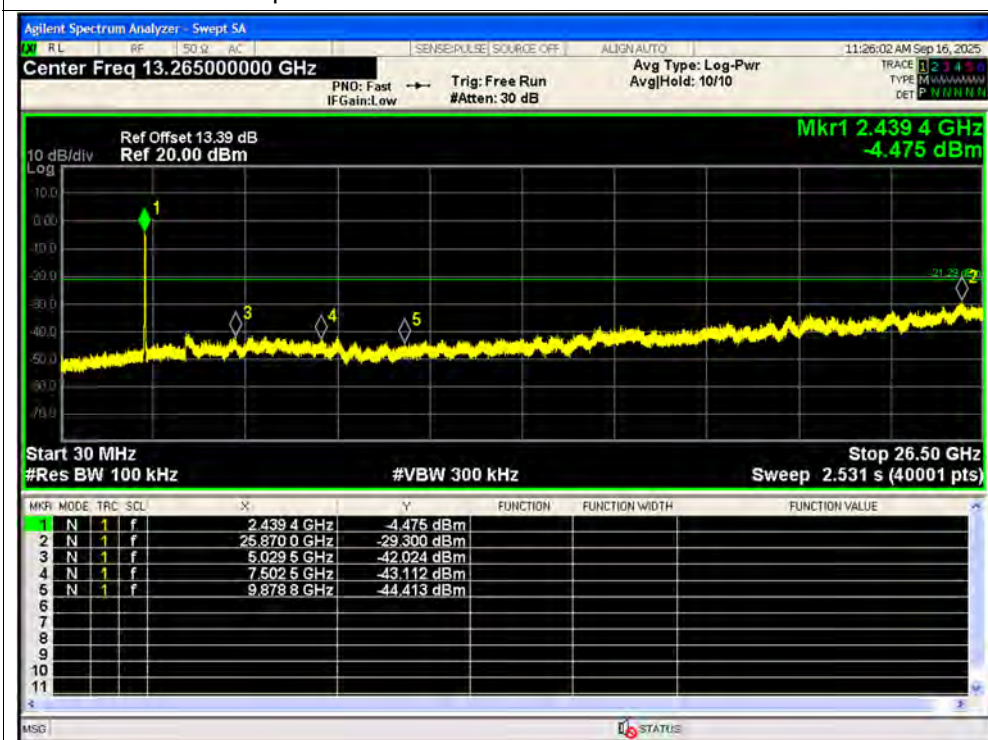
Tx. Spurious NVNT ac40 2422MHz Ant1 Emission



Tx. Spurious NVNT ac40 2437MHz Ant1 Ref



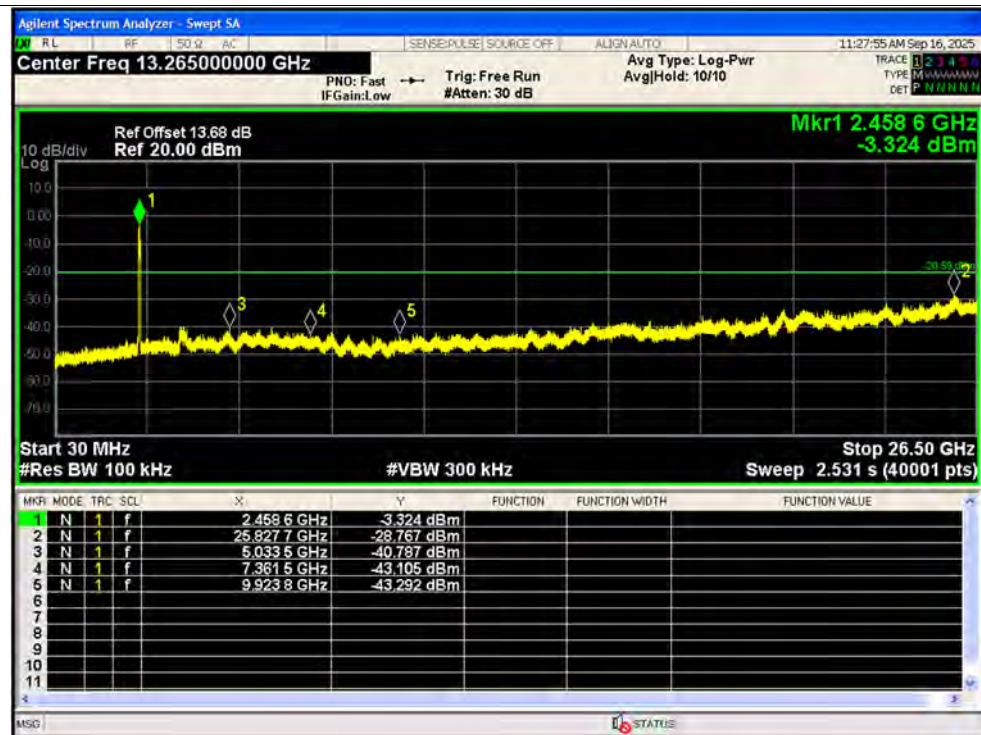
Tx. Spurious NVNT ac40 2437MHz Ant1 Emission



Tx. Spurious NVNT ac40 2452MHz Ant1 Ref



Tx. Spurious NVNT ac40 2452MHz Ant1 Emission



**A.6. Band Edge**

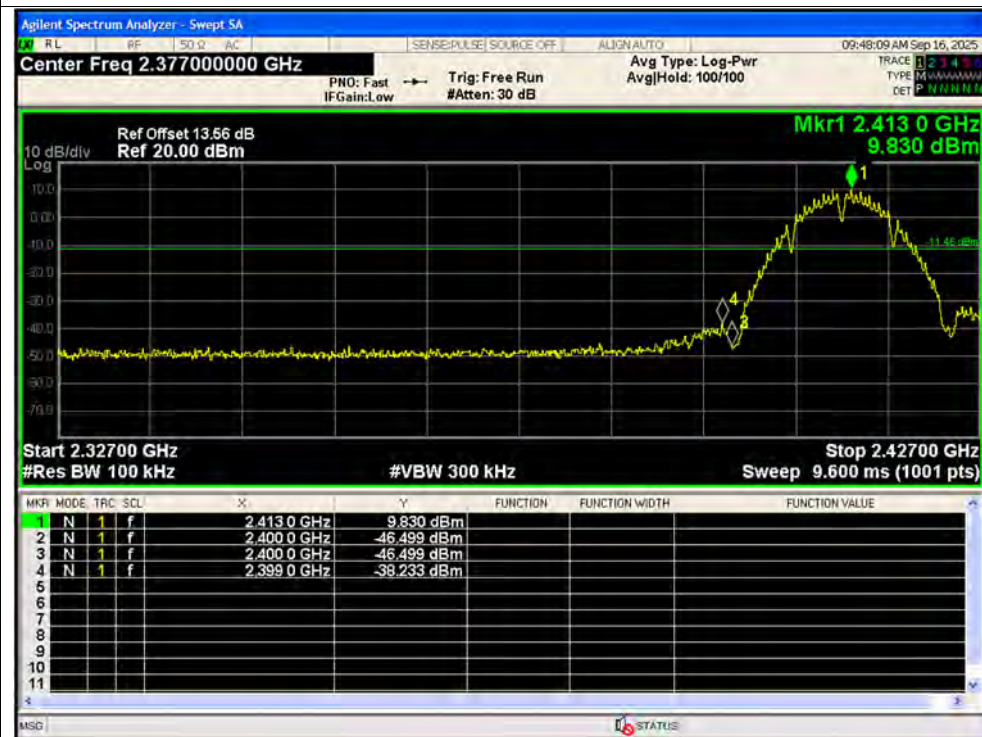
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	b	2412	Ant1	-46.78	-20	Pass
NVNT	b	2462	Ant1	-53.17	-20	Pass
NVNT	g	2412	Ant1	-35.12	-20	Pass
NVNT	g	2462	Ant1	-47.14	-20	Pass
NVNT	n20	2412	Ant1	-38.79	-20	Pass
NVNT	n20	2462	Ant1	-46.9	-20	Pass
NVNT	n40	2422	Ant1	-34.51	-20	Pass
NVNT	n40	2452	Ant1	-36.96	-20	Pass
NVNT	ac20	2412	Ant1	-39.64	-20	Pass
NVNT	ac20	2462	Ant1	-46.59	-20	Pass
NVNT	ac40	2422	Ant1	-37.22	-20	Pass
NVNT	ac40	2452	Ant1	-39.88	-20	Pass

Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref



Band Edge NVNT b 2412MHz Ant1 Emission



Band Edge NVNT b 2462MHz Ant1 Ref



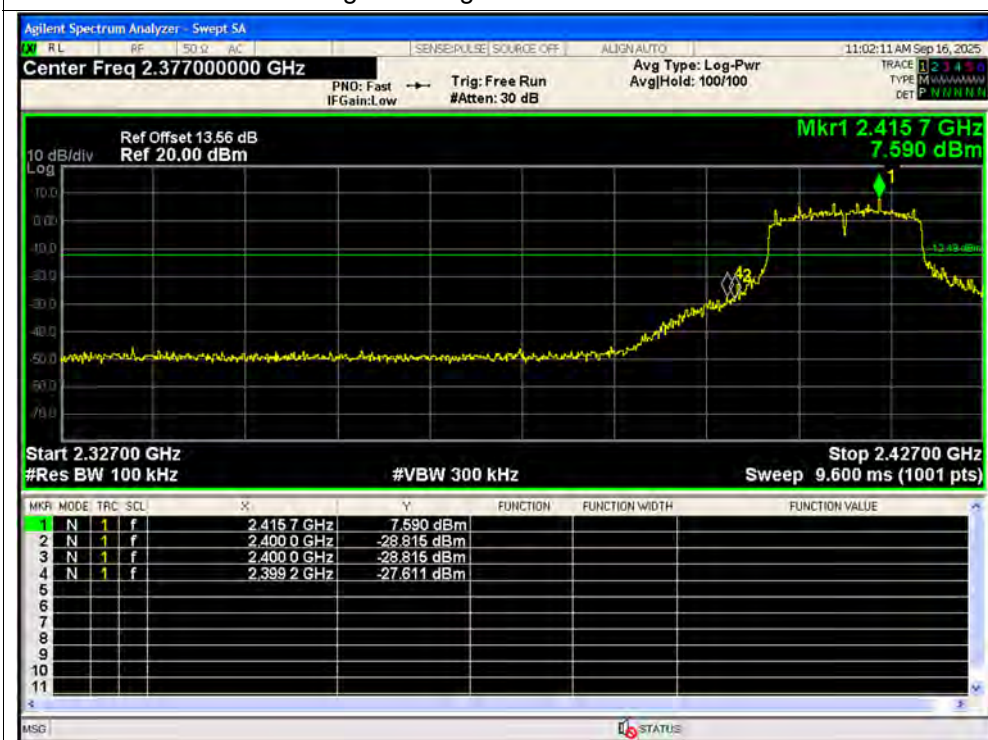
Band Edge NVNT b 2462MHz Ant1 Emission



Band Edge NVNT g 2412MHz Ant1 Ref



Band Edge NVNT g 2412MHz Ant1 Emission



Band Edge NVNT g 2462MHz Ant1 Ref



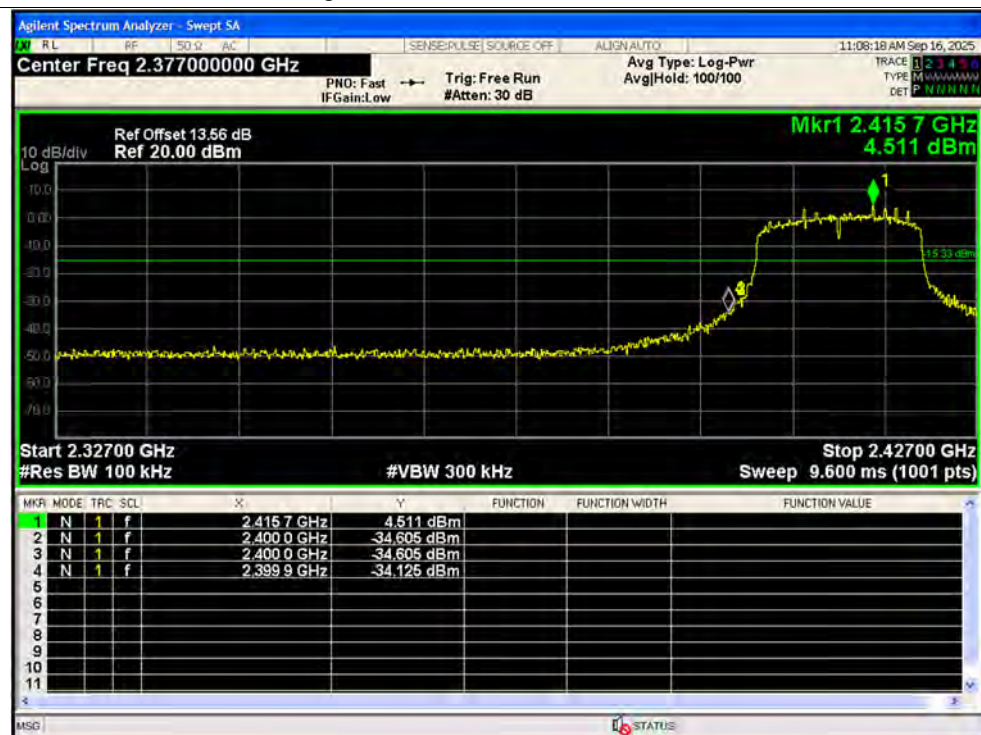
Band Edge NVNT g 2462MHz Ant1 Emission



Band Edge NVNT n20 2412MHz Ant1 Ref



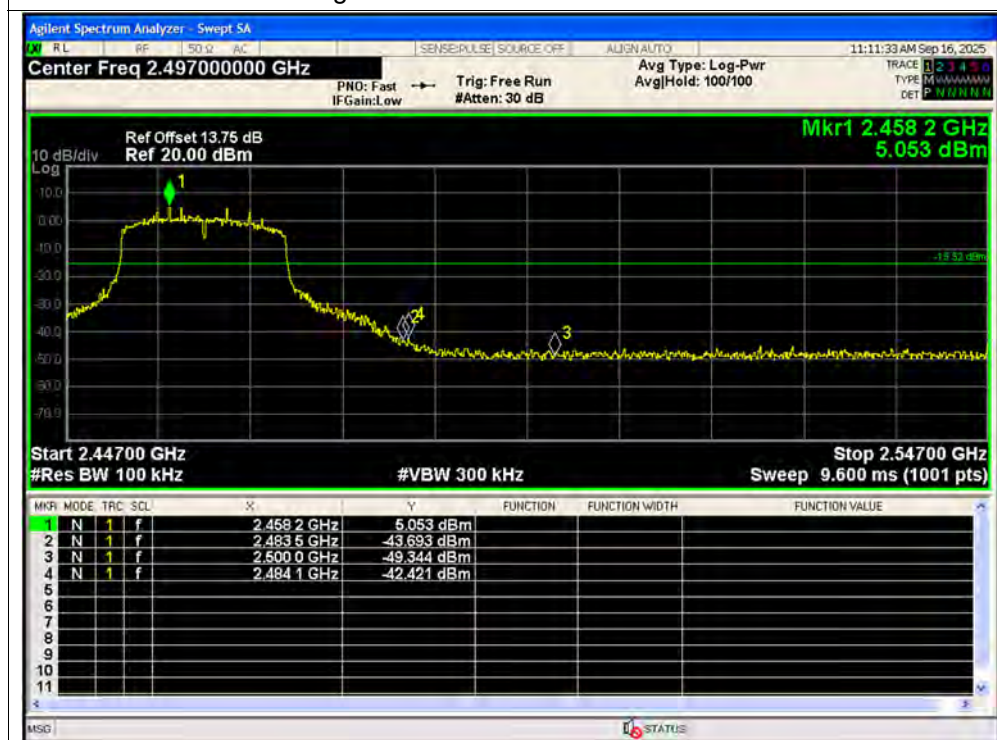
Band Edge NVNT n20 2412MHz Ant1 Emission



Band Edge NVNT n20 2462MHz Ant1 Ref



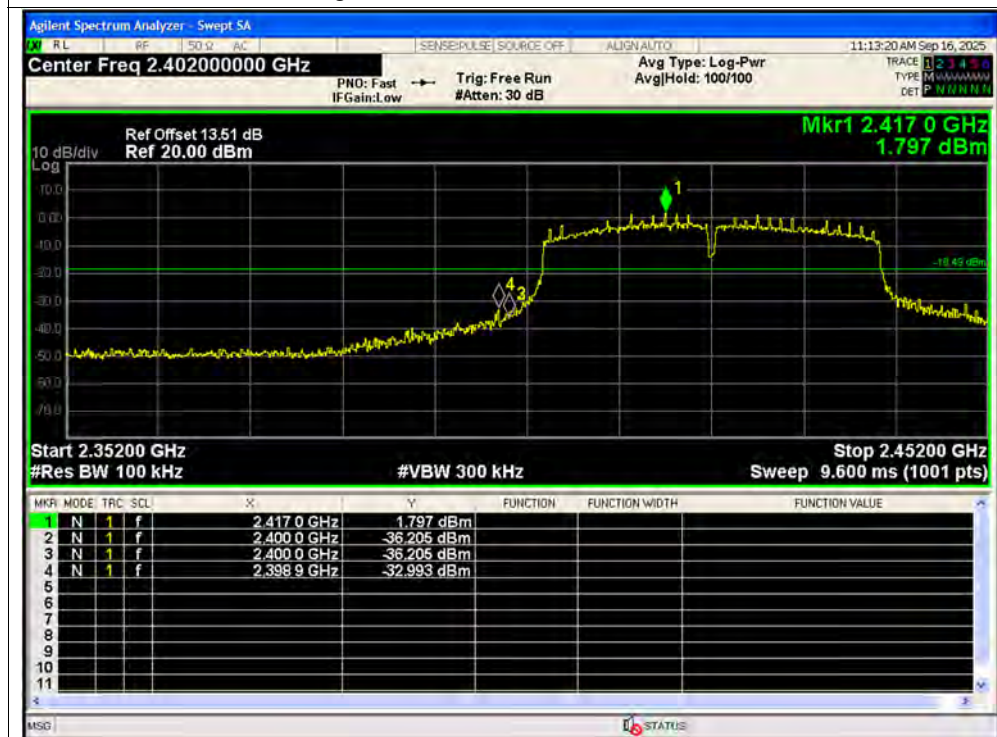
Band Edge NVNT n20 2462MHz Ant1 Emission



Band Edge NVNT n40 2422MHz Ant1 Ref



Band Edge NVNT n40 2422MHz Ant1 Emission



Band Edge NVNT n40 2452MHz Ant1 Ref



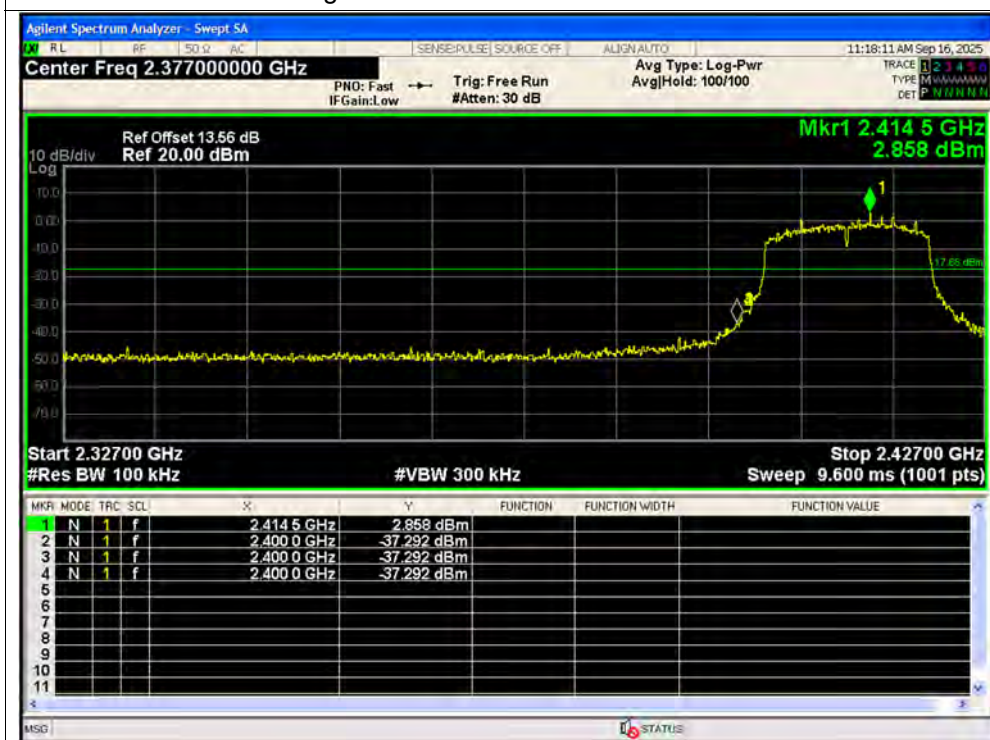
Band Edge NVNT n40 2452MHz Ant1 Emission



Band Edge NVNT ac20 2412MHz Ant1 Ref



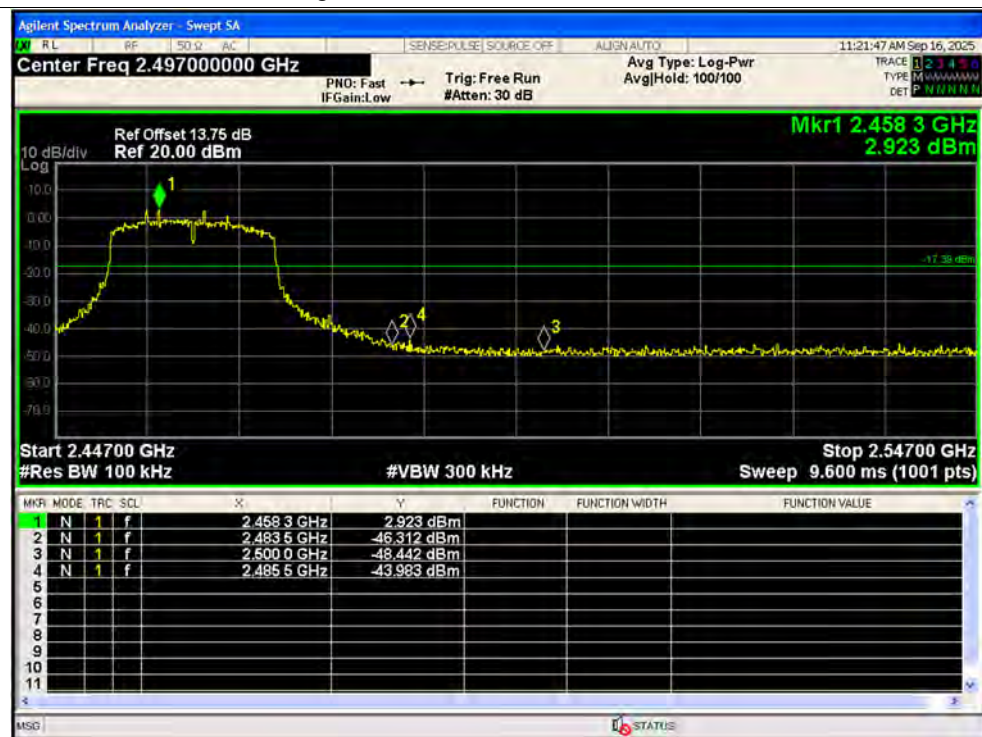
Band Edge NVNT ac20 2412MHz Ant1 Emission



Band Edge NVNT ac20 2462MHz Ant1 Ref



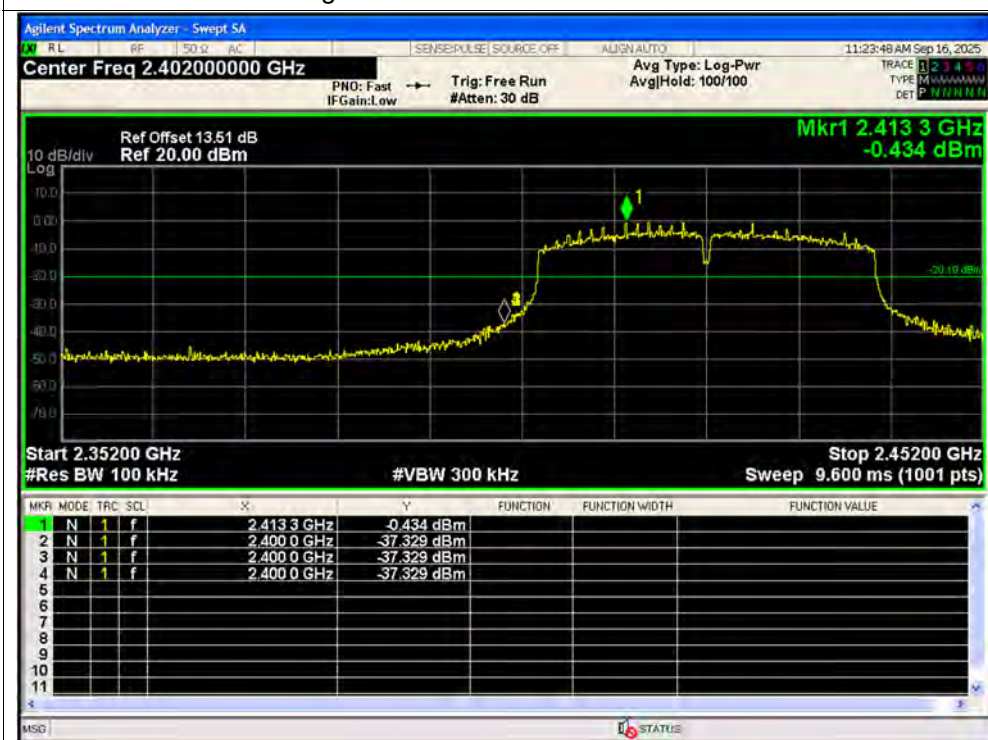
Band Edge NVNT ac20 2462MHz Ant1 Emission



Band Edge NVNT ac40 2422MHz Ant1 Ref



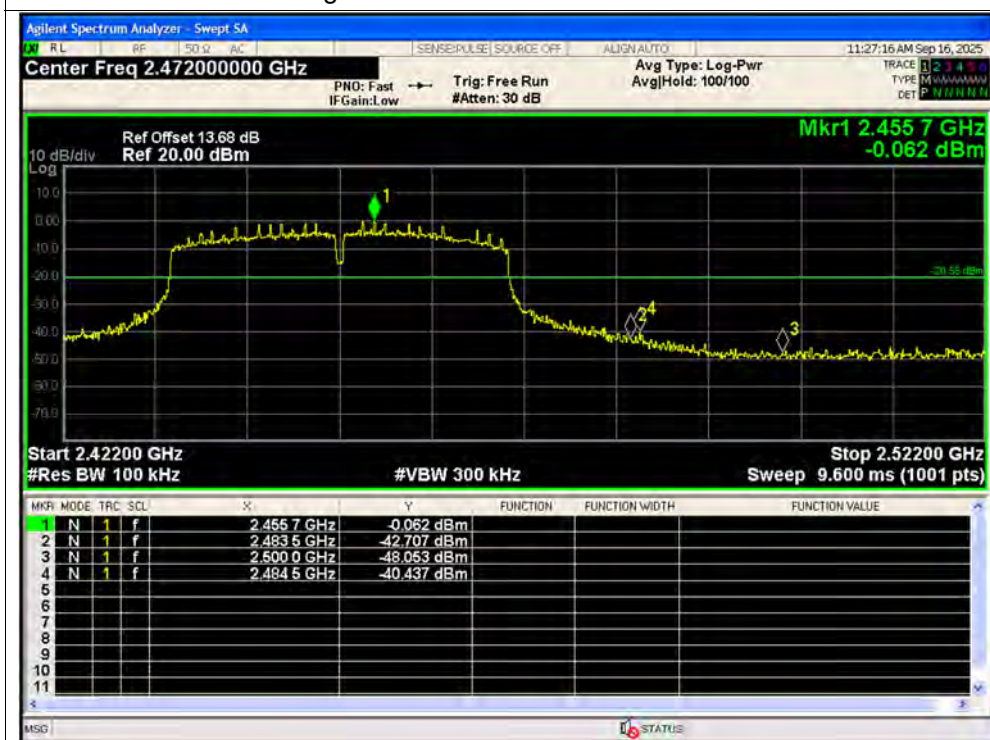
Band Edge NVNT ac40 2422MHz Ant1 Emission



Band Edge NVNT ac40 2452MHz Ant1 Ref



Band Edge NVNT ac40 2452MHz Ant1 Emission

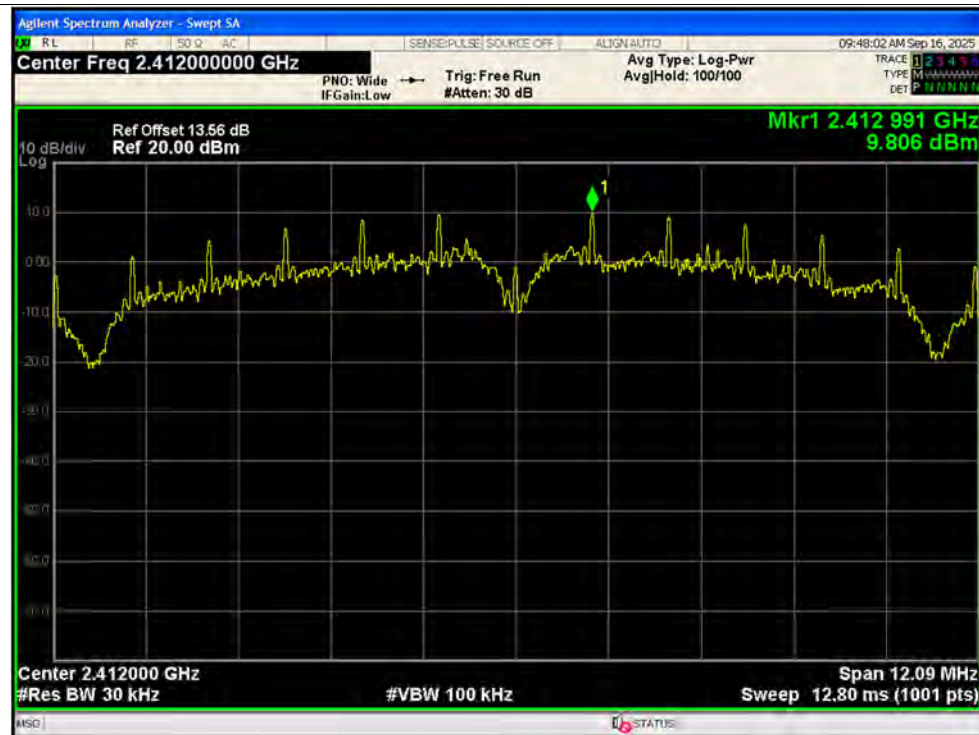


**A.7. Power Spectral Density**

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Duty Factor (dB)	Total PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	b	2412	Ant1	-0.19	0	-0.19	8	Pass
NVNT	b	2437	Ant1	-1.56	0	-1.56	8	Pass
NVNT	b	2462	Ant1	0.06	0	0.06	8	Pass
NVNT	g	2412	Ant1	-7.42	0	-7.42	8	Pass
NVNT	g	2437	Ant1	-10.7	0	-10.7	8	Pass
NVNT	g	2462	Ant1	-9.5	0	-9.5	8	Pass
NVNT	n20	2412	Ant1	-10.35	0	-10.35	8	Pass
NVNT	n20	2437	Ant1	-11.62	0	-11.62	8	Pass
NVNT	n20	2462	Ant1	-10.24	0	-10.24	8	Pass
NVNT	n40	2422	Ant1	-12.69	0	-12.69	8	Pass
NVNT	n40	2437	Ant1	-14.16	0	-14.16	8	Pass
NVNT	n40	2452	Ant1	-12.84	0	-12.84	8	Pass
NVNT	ac20	2412	Ant1	-12.22	0	-12.22	8	Pass
NVNT	ac20	2437	Ant1	-13.68	0	-13.68	8	Pass
NVNT	ac20	2462	Ant1	-12.11	0	-12.11	8	Pass
NVNT	ac40	2422	Ant1	-14.44	0	-14.44	8	Pass
NVNT	ac40	2437	Ant1	-16.22	0	-16.22	8	Pass
NVNT	ac40	2452	Ant1	-14.46	0	-14.46	8	Pass

Test Graphs

PSD NVNT b 2412MHz Ant1



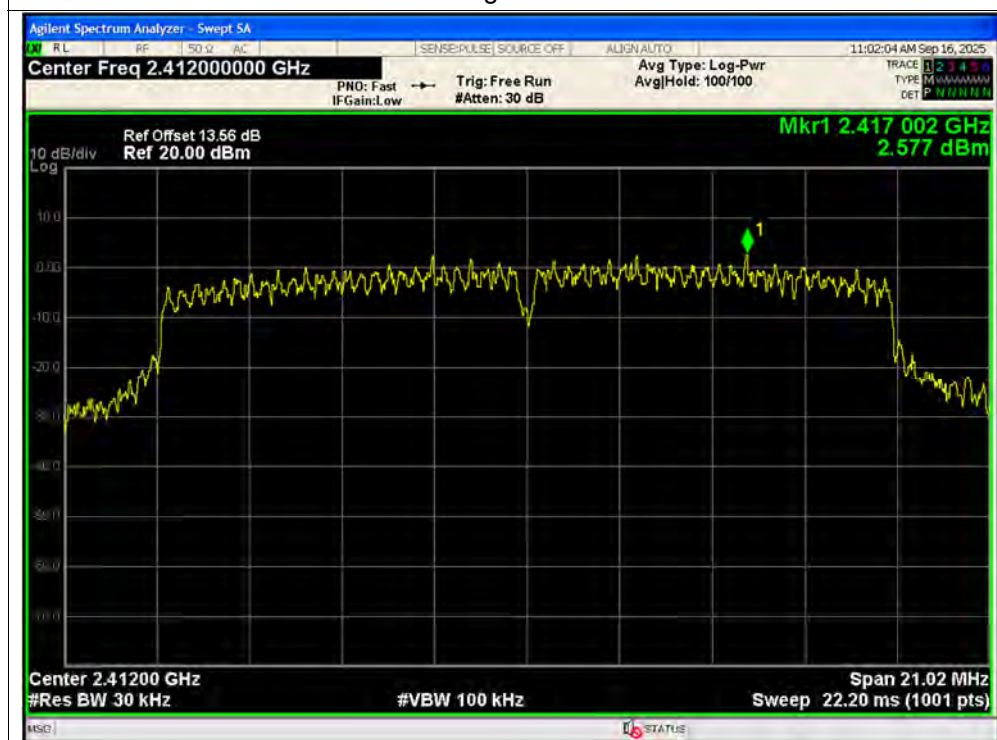
PSD NVNT b 2437MHz Ant1



PSD NVNT b 2462MHz Ant1



PSD NVNT g 2412MHz Ant1





PSD NVNT g 2437MHz Ant1



PSD NVNT g 2462MHz Ant1



PSD NVNT n20 2412MHz Ant1



PSD NVNT n20 2437MHz Ant1



PSD NVNT n20 2462MHz Ant1



PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2437MHz Ant1



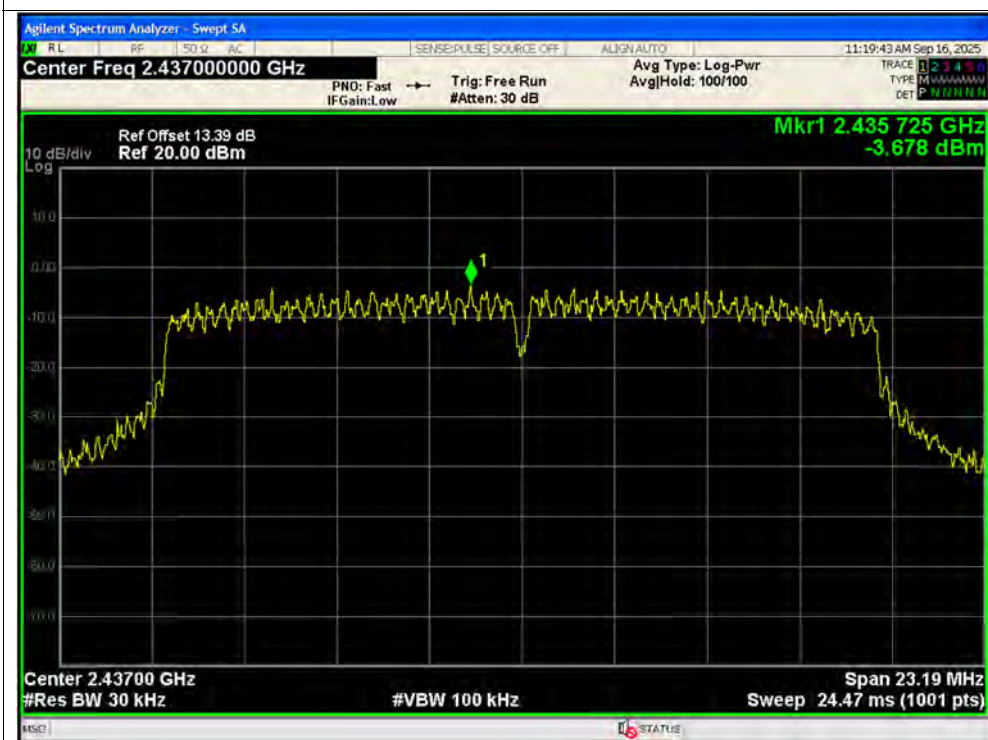
PSD NVNT n40 2452MHz Ant1



PSD NVNT ac20 2412MHz Ant1



PSD NVNT ac20 2437MHz Ant1



PSD NVNT ac20 2462MHz Ant1



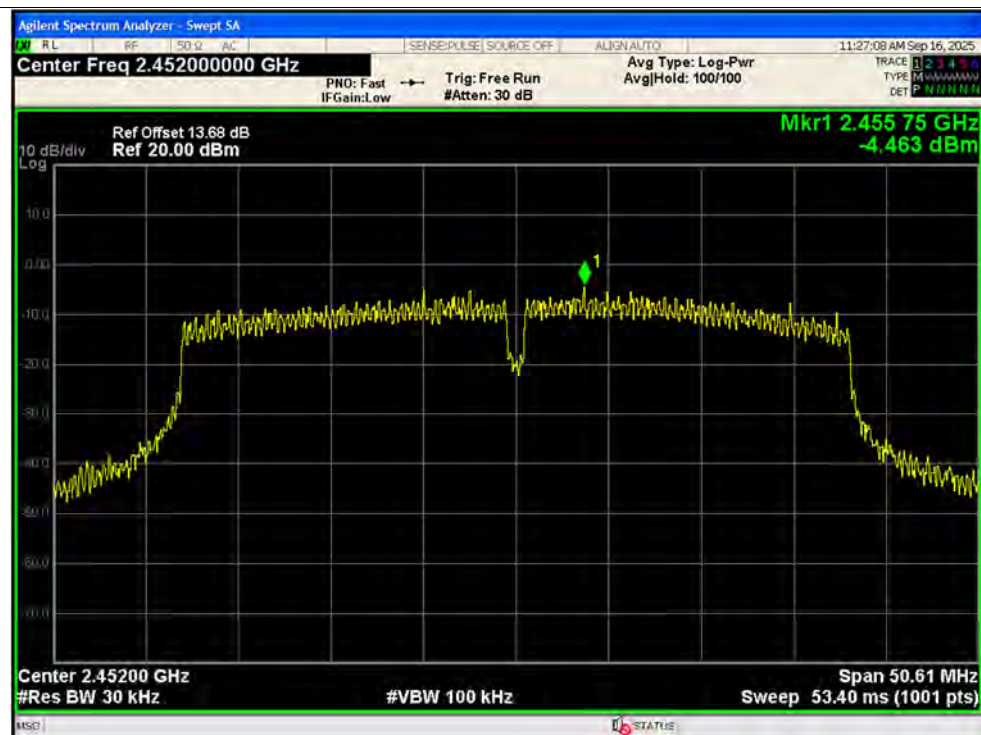
PSD NVNT ac40 2422MHz Ant1



PSD NVNT ac40 2437MHz Ant1



PSD NVNT ac40 2452MHz Ant1





A.8. Conducted Emission

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A. Test Setup:

Test Mode: EUT+Adapter+Data cable+SIM card+PC+WIFI TX

Test voltage: AC 120V/60Hz

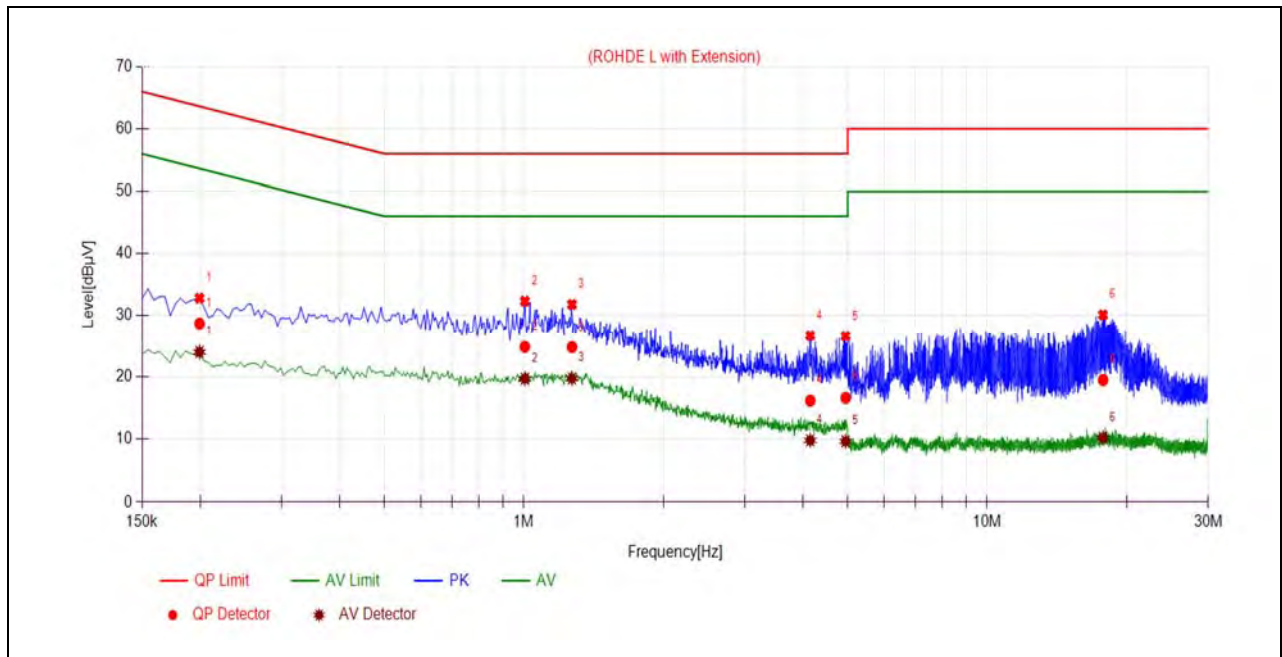
The measurement results are obtained as below:

$$E \text{ [dB}\mu\text{V]} = U_R + L_{\text{Cable loss [dB]} + A_{\text{Factor}}$$

U_R : Receiver Reading

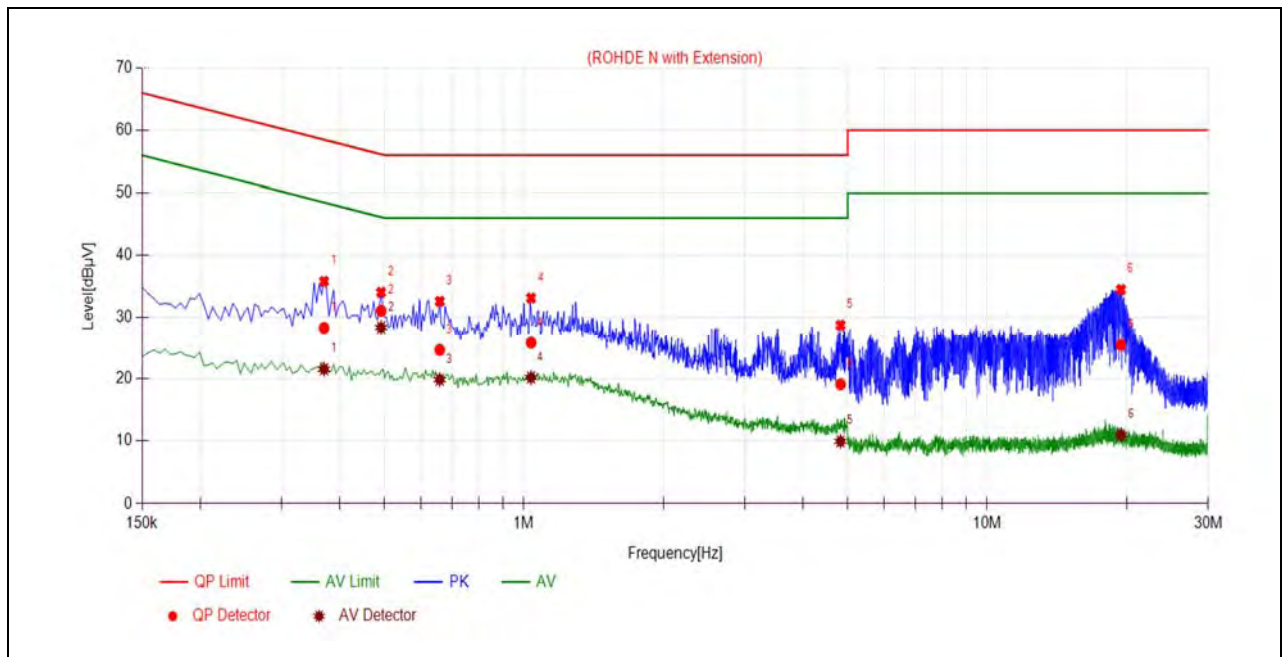
A_{Factor} : Voltage division factor of LISN

B. Test Plot:



(L Phase)

No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1995	28.71	24.03	63.63	53.63	Line	PASS
2	1.0049	24.87	19.72	56.00	46.00		PASS
3	1.2704	24.83	19.77	56.00	46.00		PASS
4	4.1509	16.21	9.83	56.00	46.00		PASS
5	4.9474	16.65	9.67	56.00	46.00		PASS
6	17.7849	19.53	10.25	60.00	50.00		PASS



(N Phase)

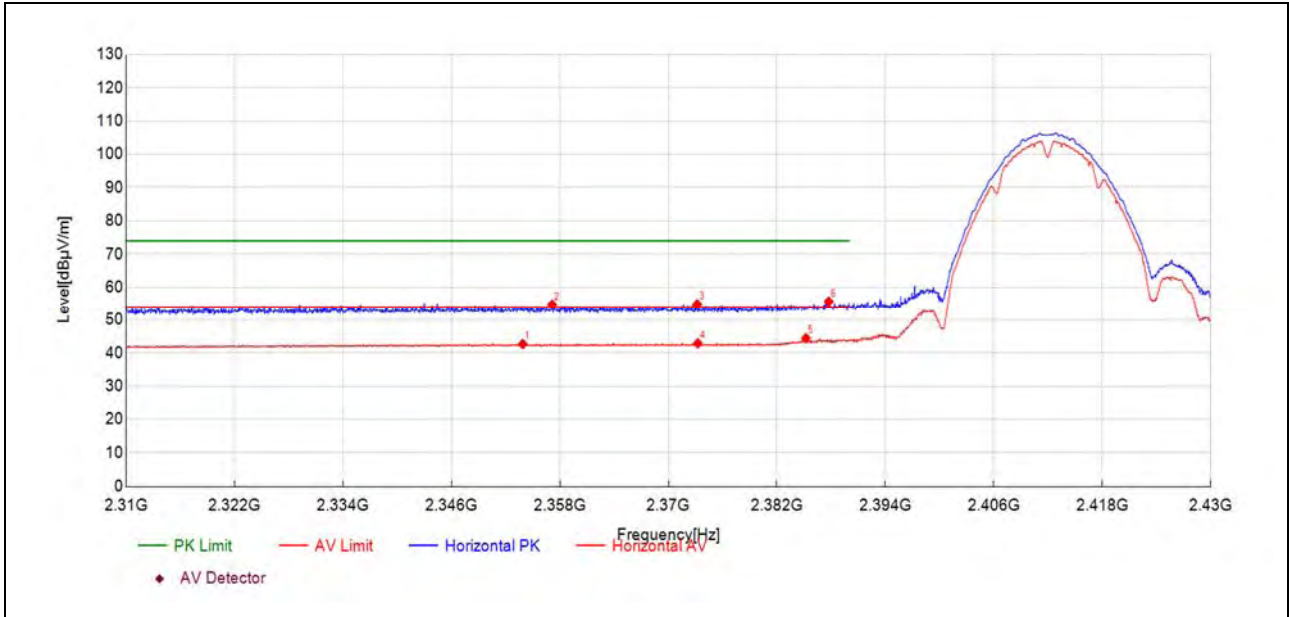
No.	Fre. (MHz)	Emission Level (dBμV)		Limit (dBμV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.3705	28.34	21.57	58.49	48.49	Neutral	PASS
2	0.4920	31.10	28.42	56.13	46.13		PASS
3	0.6584	24.69	19.88	56.00	46.00		PASS
4	1.0364	25.85	20.24	56.00	46.00		PASS
5	4.8260	19.14	9.95	56.00	46.00		PASS
6	19.4520	25.49	10.98	60.00	50.00		PASS

A.9. Restricted Frequency Bands

Note 1: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (Horizontal) was recorded in this test report.

Note 2 All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

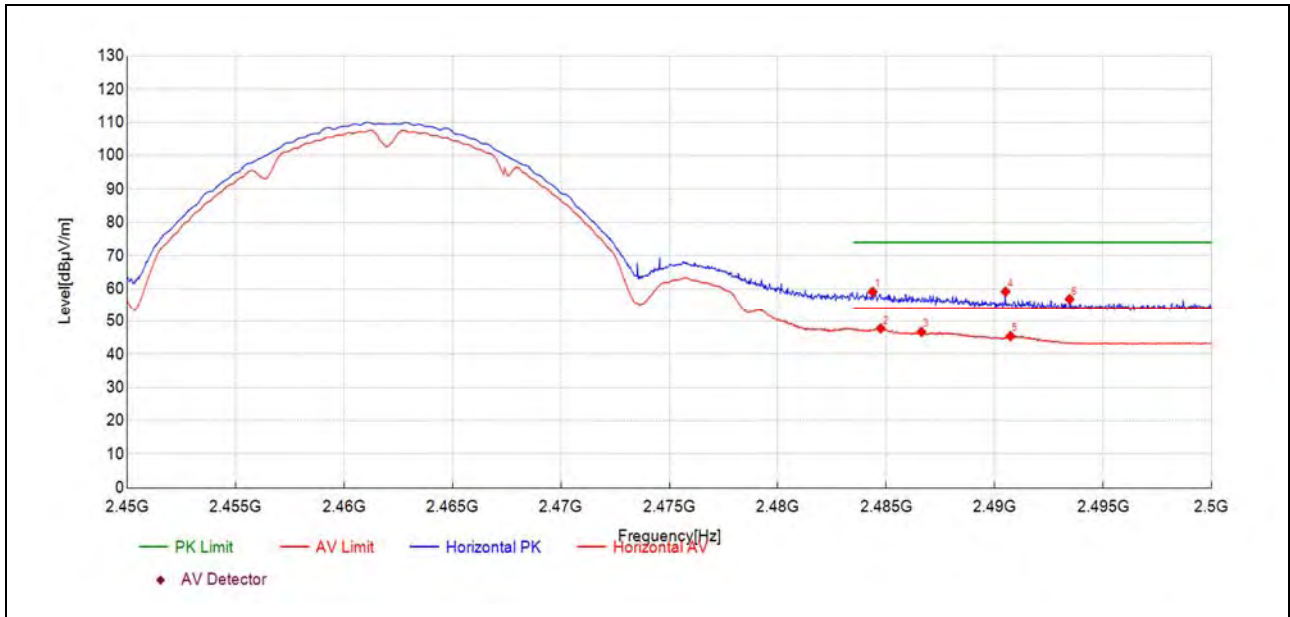
802.11b Mode



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2353.89	10.2	42.66	32.420	54.00	11.34	150	357	AV	PASS
2357.14	22.4	54.77	32.420	74.00	19.23	150	202	PK	PASS
2373.18	22.4	54.86	32.490	74.00	19.14	150	0	PK	PASS
2373.26	10.4	42.87	32.490	54.00	11.13	150	0	AV	PASS
2385.23	11.9	44.43	32.530	54.00	9.57	150	97	AV	PASS
2387.75	23.1	55.67	32.540	74.00	18.33	150	107	PK	PASS



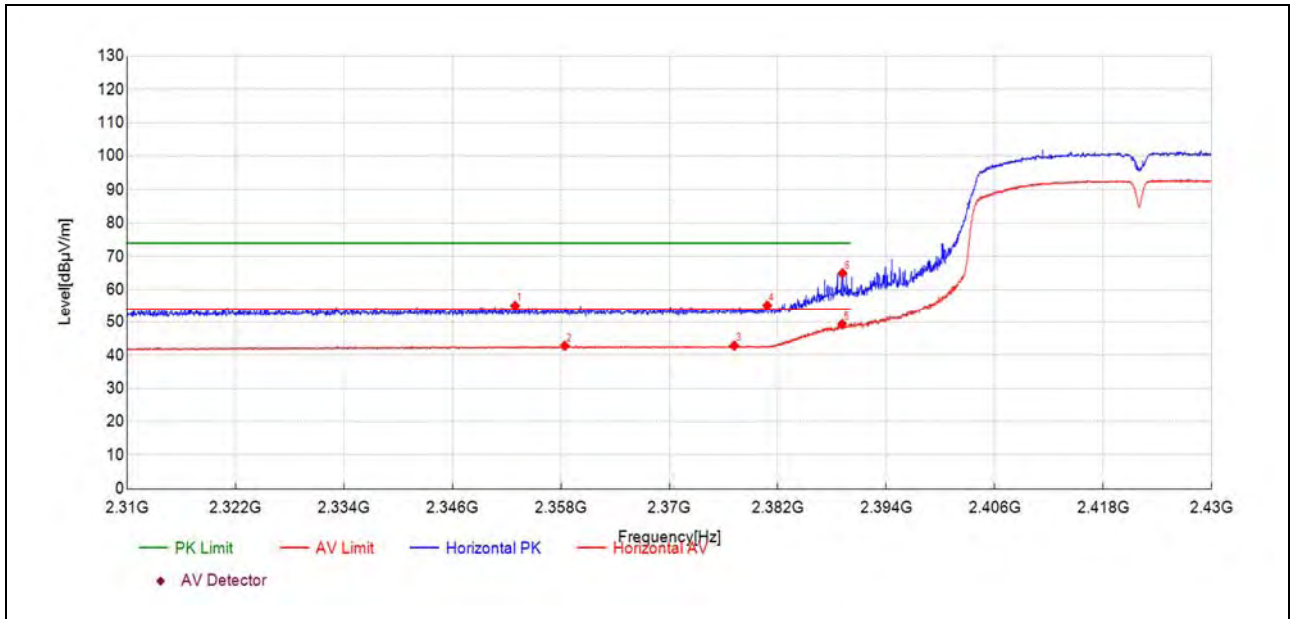
Plot for Channel 11



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2484.37	26.0	59.07	33.030	74.00	14.93	150	114	PK	PASS
2484.74	14.7	47.76	33.030	54.00	6.24	150	123	AV	PASS
2486.62	13.7	46.73	33.030	54.00	7.27	150	102	AV	PASS
2490.50	26.1	59.12	33.020	74.00	14.88	150	249	PK	PASS
2490.72	12.4	45.44	33.020	54.00	8.56	150	102	AV	PASS
2493.45	23.8	56.85	33.010	74.00	17.15	150	237	PK	PASS

**802.11n (HT40) Mode**

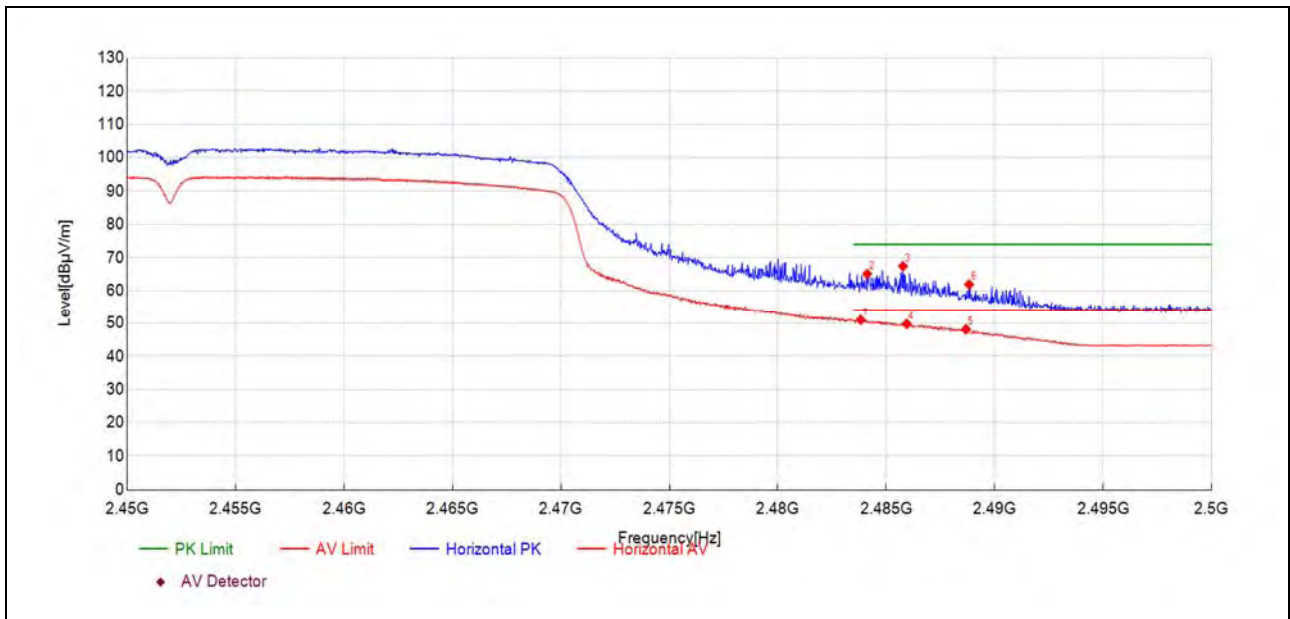
Plot for Channel 3



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2352.93	22.7	55.09	32.410	74.00	18.91	150	360	PK	PASS
2358.42	10.4	42.80	32.430	54.00	11.20	150	160	AV	PASS
2377.18	10.4	42.87	32.490	54.00	11.13	150	4	AV	PASS
2380.82	22.7	55.22	32.510	74.00	18.78	150	299	PK	PASS
2389.11	16.8	49.33	32.540	54.00	4.67	150	106	AV	PASS
2389.15	32.4	64.92	32.540	74.00	9.08	150	106	PK	PASS



Plot for Channel 9



Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2483.82	18.0	50.98	33.030	54.00	3.02	150	114	AV	PASS
2484.12	32.1	65.10	33.030	74.00	8.90	150	122	PK	PASS
2485.77	34.4	67.41	33.030	74.00	6.59	150	103	PK	PASS
2485.94	16.7	49.74	33.030	54.00	4.26	150	103	AV	PASS
2488.67	15.1	48.11	33.020	54.00	5.89	150	114	AV	PASS
2488.82	28.9	61.90	33.020	74.00	12.10	150	114	PK	PASS



A.10. Radiated Emission

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V/m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = L_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

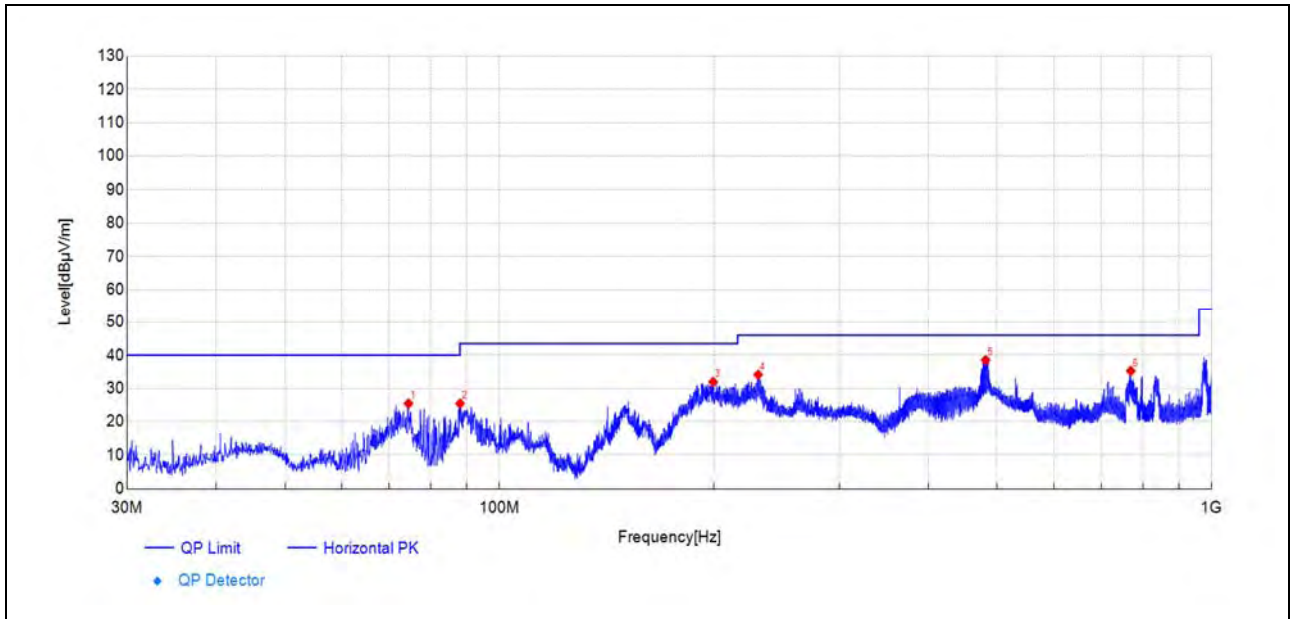
Note2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note3: For the frequency, which started from 18GHz to 40GHz harmonic of the highest frequency, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Note 4: All test modes and bandwidth were considered and evaluated respectively by performing full test, only the worst data were recorded for each bandwidth.

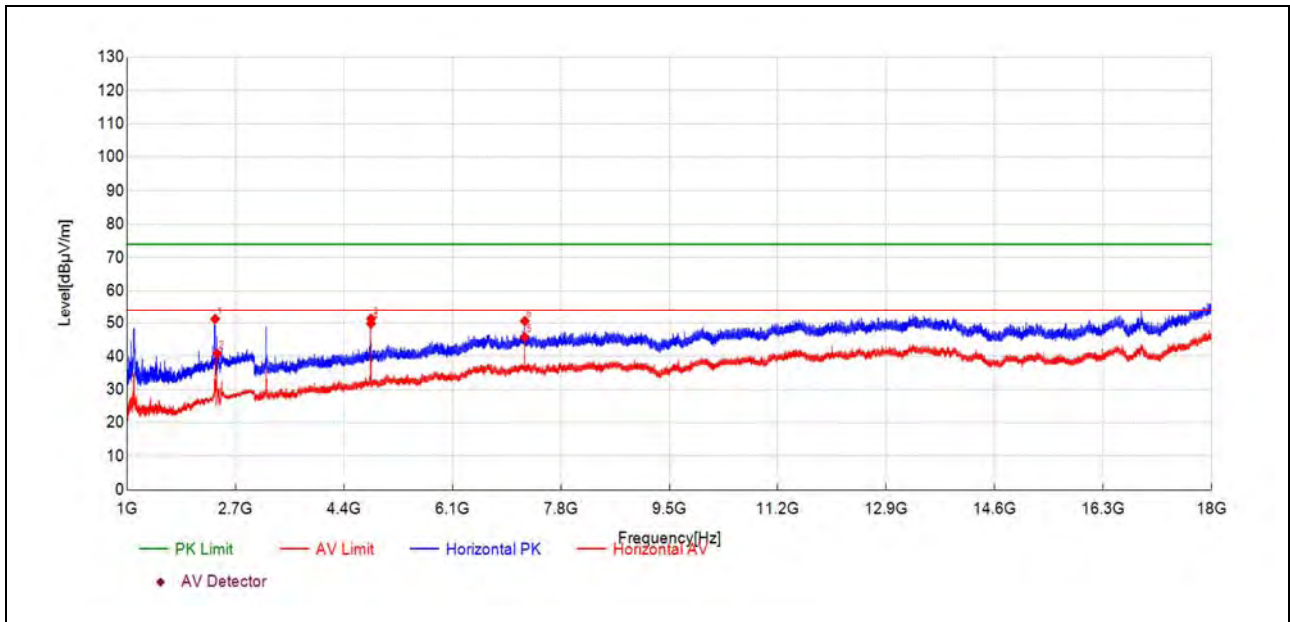
**802.11b Mode**

Plot for Channel 1



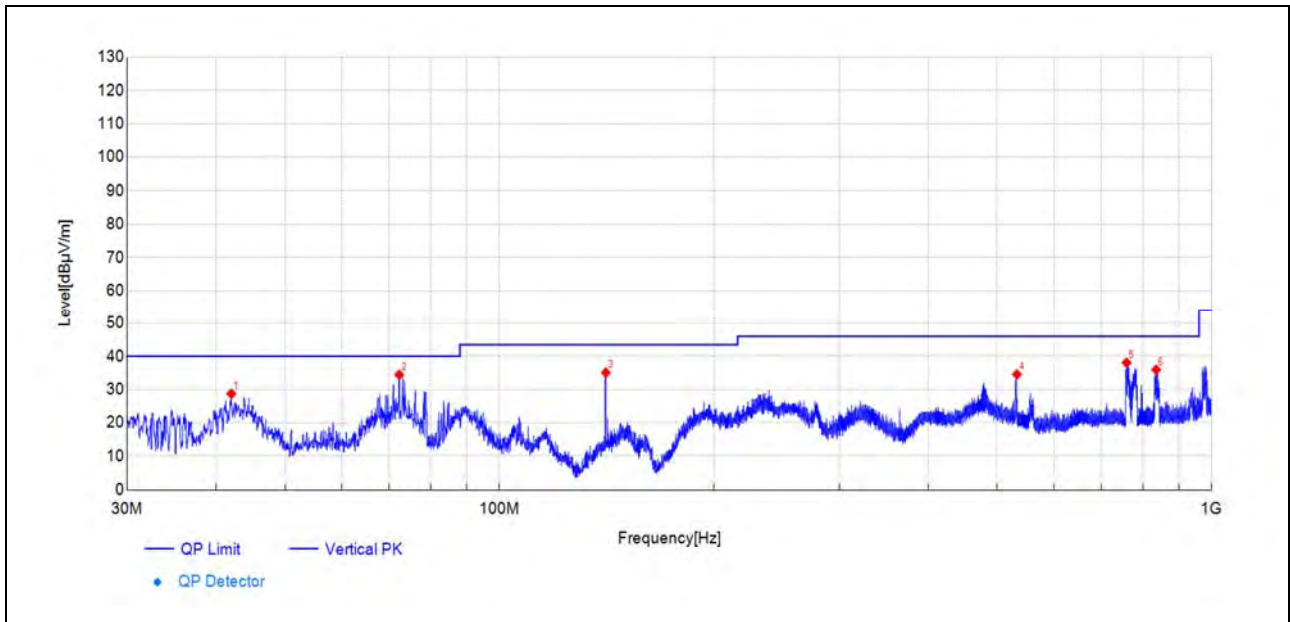
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
74.53	60.5	25.42	-35.100	40.00	14.58	150	318	PK	PASS
88.06	58.2	25.45	-32.720	43.50	18.05	150	357	PK	PASS
199.52	62.1	31.96	-30.130	43.50	11.54	150	142	PK	PASS
230.80	62.8	34.12	-28.670	46.00	11.88	150	210	PK	PASS
481.51	60.8	38.51	-22.300	46.00	7.49	150	196	PK	PASS
769.81	52.2	35.25	-16.980	46.00	10.75	150	351	PK	PASS



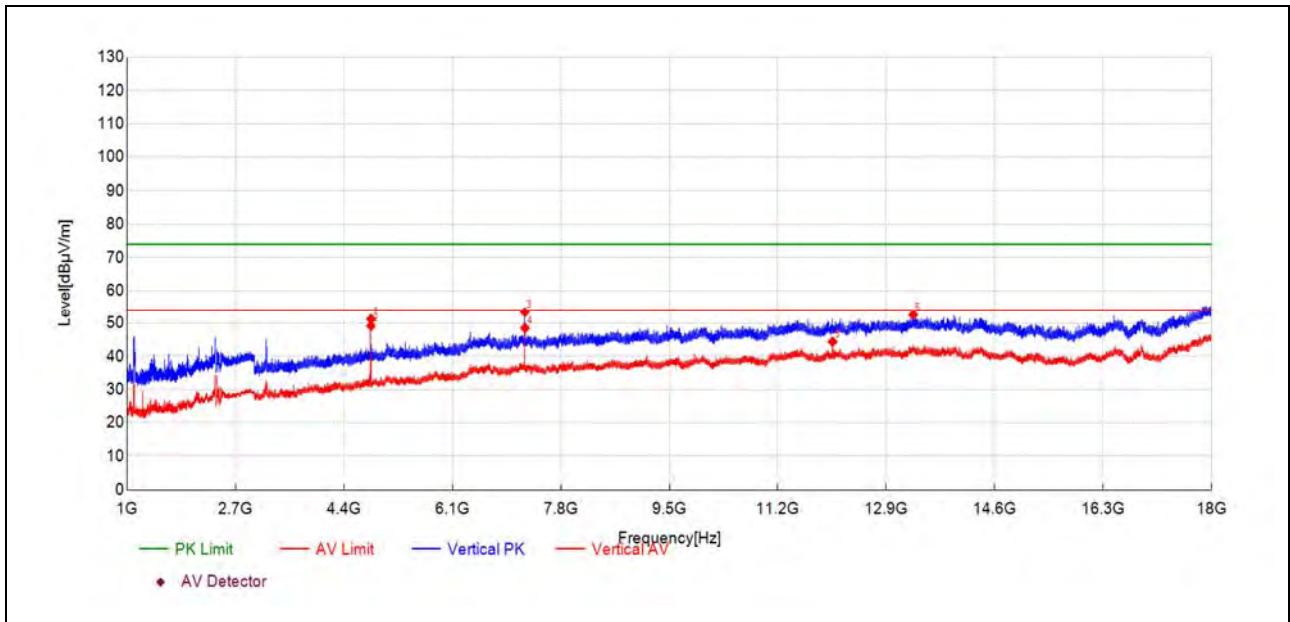
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2381.48	50.6	51.20	0.620	74.00	22.80	150	279	PK	PASS
2413.88	39.9	40.77	0.830	-	-	150	103	AV	NA
4823.77	61.9	51.30	-10.550	74.00	22.70	150	167	PK	PASS
4823.77	60.4	49.85	-10.550	54.00	4.15	150	167	AV	PASS
7234.98	49.7	45.79	-3.930	54.00	8.21	150	308	AV	PASS
7234.98	54.5	50.59	-3.930	74.00	23.41	150	308	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

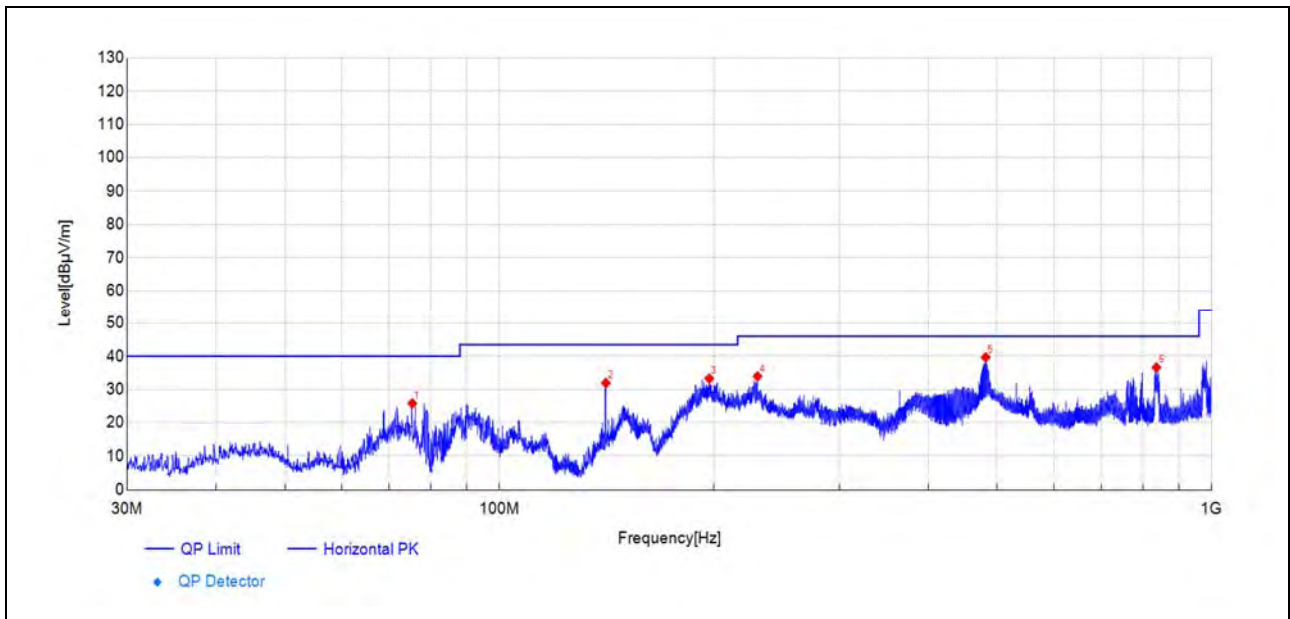
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
42.03	57.3	28.68	-28.570	40.00	11.32	150	122	PK	PASS
72.34	69.3	34.42	-34.890	40.00	5.58	150	203	PK	PASS
141.07	68.7	35.09	-33.580	43.50	8.41	150	257	PK	PASS
532.78	56.0	34.57	-21.390	46.00	11.43	150	3	PK	PASS
759.43	55.0	38.05	-16.970	46.00	7.95	150	54	PK	PASS
835.63	51.8	35.95	-15.890	46.00	10.05	150	175	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

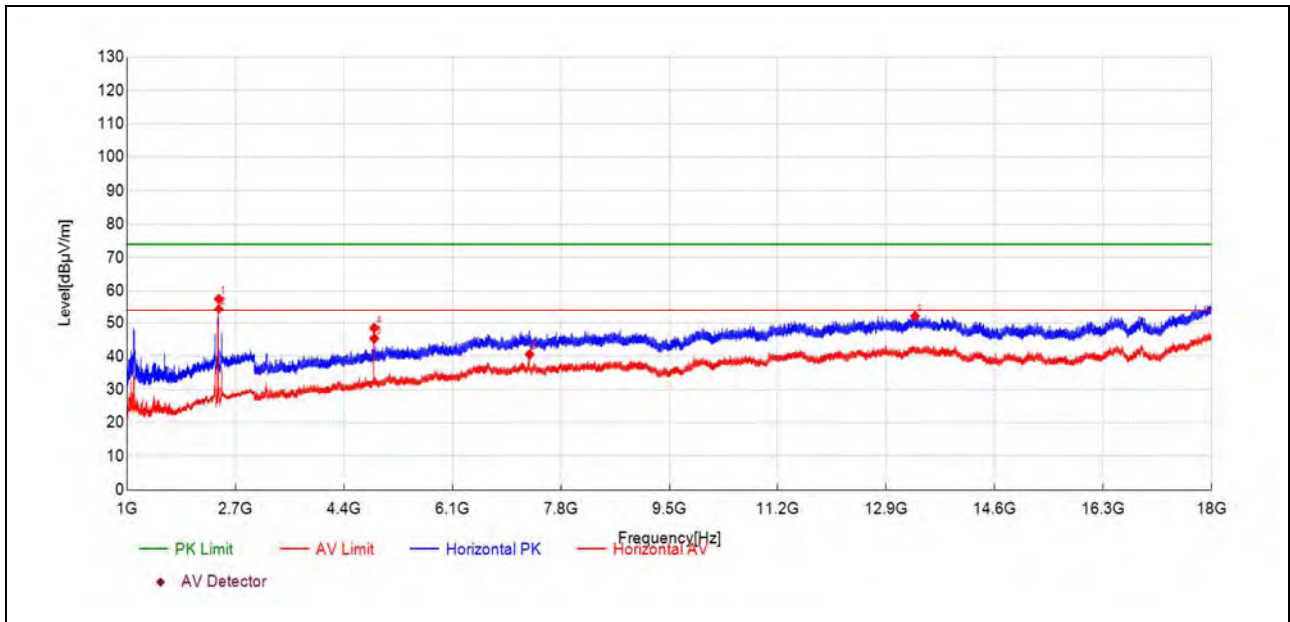
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
4823.77	61.8	51.23	-10.550	74.00	22.77	150	167	PK	PASS
4823.77	59.7	49.15	-10.550	54.00	4.85	150	141	AV	PASS
7234.98	57.3	53.37	-3.930	74.00	20.63	150	215	PK	PASS
7236.91	52.5	48.53	-3.940	54.00	5.47	150	24	AV	PASS
12058.84	41.8	44.37	2.610	54.00	9.63	150	120	AV	PASS
13321.30	47.2	52.51	5.320	74.00	21.49	150	72	PK	PASS

Plot for Channel 6



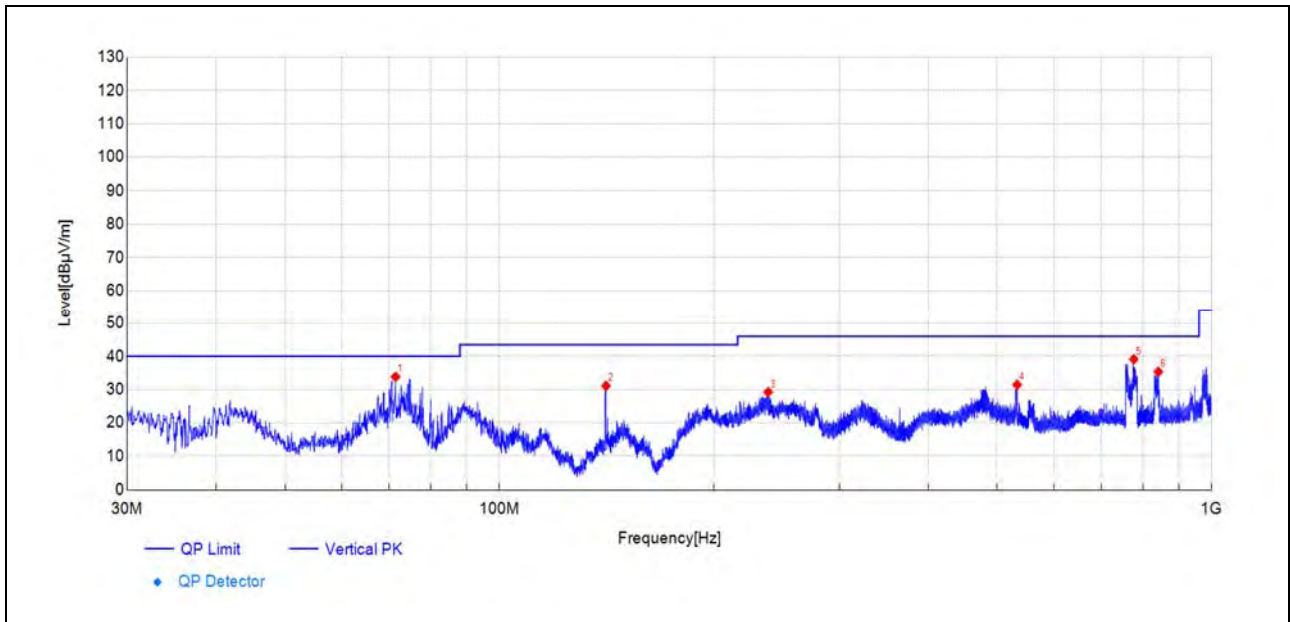
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
75.45	61.0	25.84	-35.180	40.00	14.16	150	181	PK	PASS
141.07	65.5	31.94	-33.580	43.50	11.56	150	288	PK	PASS
197.04	63.0	33.27	-29.730	43.50	10.23	150	99	PK	PASS
230.36	62.6	33.93	-28.700	46.00	12.07	150	181	PK	PASS
481.51	62.0	39.66	-22.300	46.00	6.34	150	181	PK	PASS
836.60	52.5	36.63	-15.870	46.00	9.37	150	99	PK	PASS



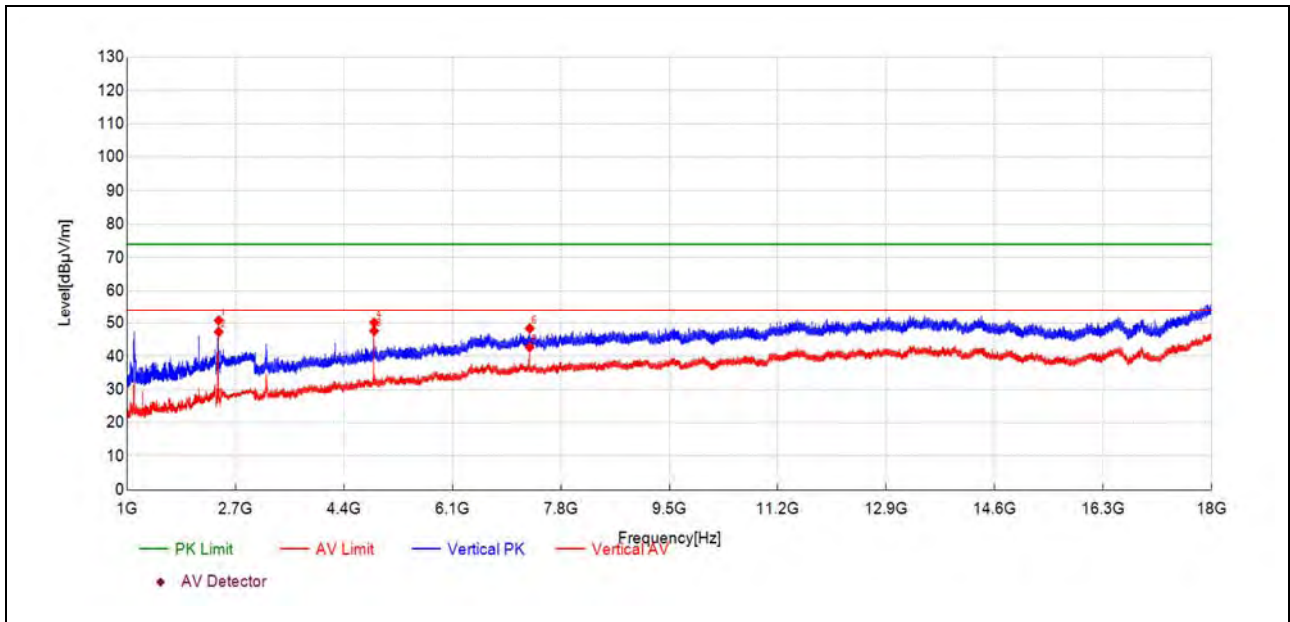
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2437.89	56.5	57.50	0.990	-	-	150	138	PK	NA
2437.89	53.4	54.38	0.990	-	-	150	138	AV	NA
4873.61	55.4	45.33	-10.070	54.00	8.67	150	73	AV	PASS
4874.09	58.5	48.46	-10.070	74.00	25.54	150	73	PK	PASS
7310.46	44.2	40.58	-3.600	54.00	13.42	150	284	AV	PASS
13350.33	47.0	52.08	5.110	74.00	21.92	150	96	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

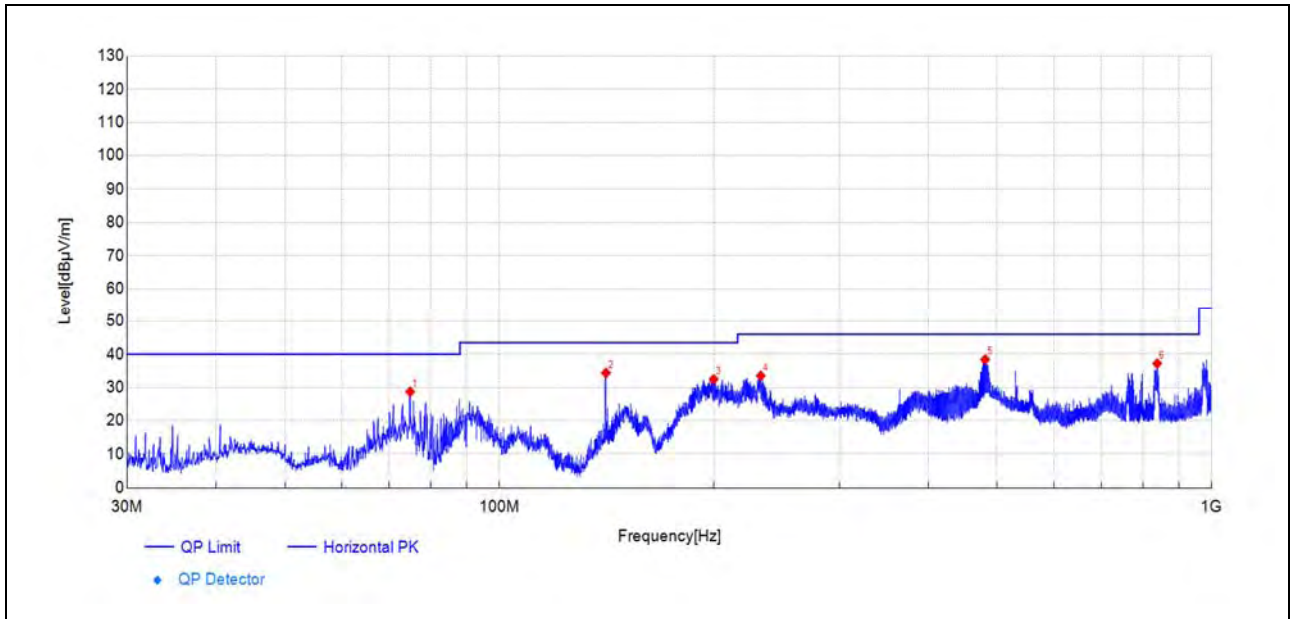
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
71.47	68.6	33.81	-34.760	40.00	6.19	150	170	PK	PASS
141.12	64.7	31.09	-33.580	43.50	12.41	150	143	PK	PASS
238.46	57.6	29.21	-28.430	46.00	16.79	150	103	PK	PASS
533.12	52.8	31.44	-21.390	46.00	14.56	150	35	PK	PASS
777.37	56.0	39.12	-16.910	46.00	6.88	150	290	PK	PASS
841.54	51.1	35.35	-15.750	46.00	10.65	150	222	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

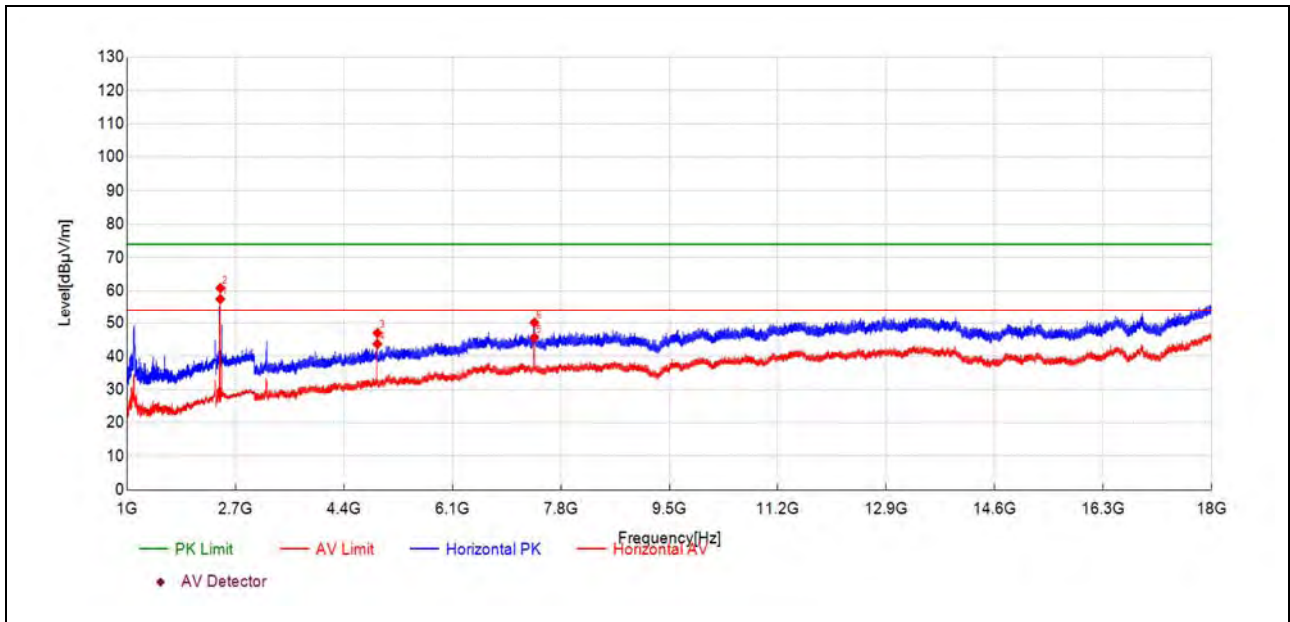
Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2437.09	49.8	50.77	0.990	-	-	150	140	PK	NA
2437.89	46.3	47.32	0.990	-	-	150	140	AV	NA
4873.61	57.7	47.63	-10.070	54.00	6.37	150	141	AV	PASS
4874.09	60.2	50.13	-10.070	74.00	23.87	150	141	PK	PASS
7310.46	46.3	42.71	-3.600	54.00	11.29	150	214	AV	PASS
7312.40	52.0	48.37	-3.610	74.00	25.63	150	214	PK	PASS
13331.46	47.6	52.79	5.240	74.00	21.21	150	193	PK	PASS

Plot for Channel 11



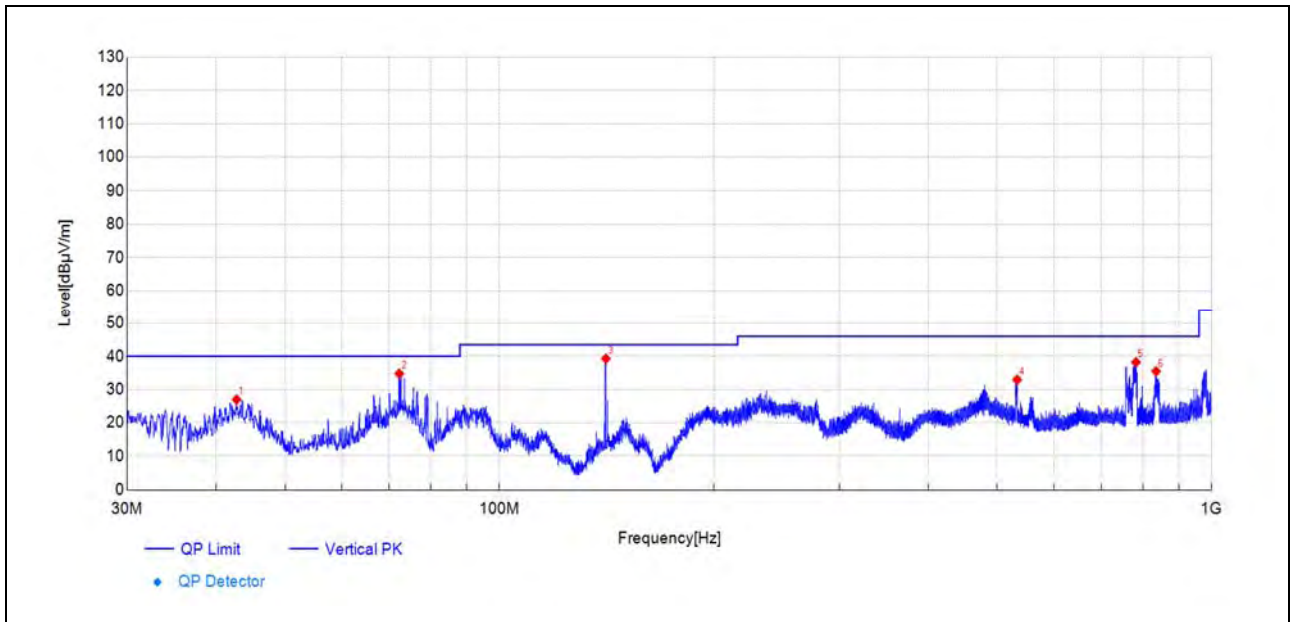
(Antenna Horizontal, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
74.91	63.9	28.71	-35.140	40.00	11.29	150	360	PK	PASS
141.07	67.9	34.36	-33.580	43.50	9.14	150	62	PK	PASS
199.95	62.7	32.46	-30.220	43.50	11.04	150	143	PK	PASS
232.79	62.1	33.51	-28.580	46.00	12.49	150	224	PK	PASS
480.78	60.7	38.41	-22.310	46.00	7.59	150	197	PK	PASS
838.24	53.1	37.21	-15.840	46.00	8.79	150	75	PK	PASS



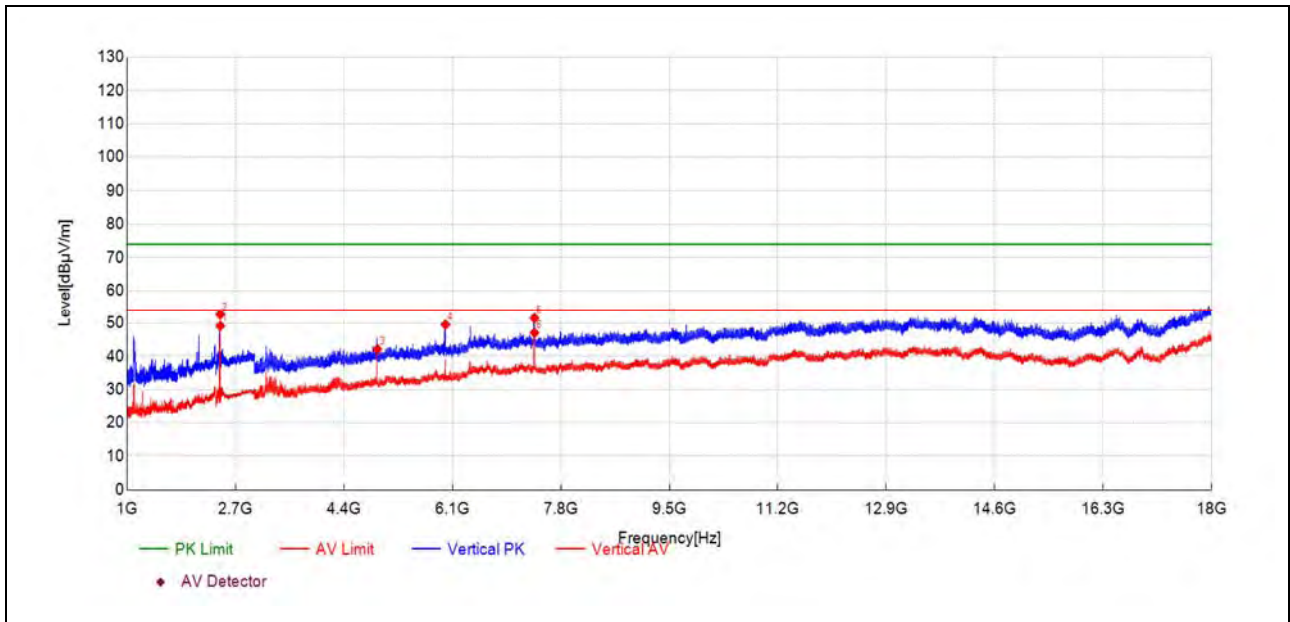
(Antenna Horizontal, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2461.49	56.5	57.49	1.020	-	-	150	103	AV	NA
2462.29	59.8	60.79	1.020	-	-	150	103	PK	NA
4923.93	57.0	46.99	-9.970	74.00	27.01	150	73	PK	PASS
4923.93	53.7	43.70	-9.970	54.00	10.30	150	144	AV	PASS
7384.98	49.5	45.67	-3.830	54.00	8.33	150	286	AV	PASS
7384.98	53.9	50.11	-3.830	74.00	23.89	150	310	PK	PASS



(Antenna Vertical, 30MHz to 1GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
42.76	55.4	26.96	-28.480	40.00	13.04	150	218	PK	PASS
72.34	69.7	34.77	-34.890	40.00	5.23	150	151	PK	PASS
141.07	72.9	39.27	-33.580	43.50	4.23	150	326	PK	PASS
533.16	54.3	32.94	-21.380	46.00	13.06	150	326	PK	PASS
782.81	55.0	38.21	-16.810	46.00	7.79	150	177	PK	PASS
835.48	51.4	35.47	-15.890	46.00	10.53	150	177	PK	PASS



(Antenna Vertical, 1GHz to 18GHz)

Fre. (MHz)	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector	Verdict
2461.49	48.1	49.14	1.020	-	-	150	150	AV	NA
2462.29	51.6	52.63	1.020	-	-	150	150	PK	NA
4923.93	52.1	42.16	-9.970	54.00	11.84	150	121	AV	PASS
5990.90	56.7	49.55	-7.180	74.00	24.45	150	190	PK	PASS
7384.98	55.4	51.53	-3.830	74.00	22.47	150	46	PK	PASS
7387.40	50.9	47.09	-3.830	54.00	6.91	150	190	AV	PASS

————— END OF REPORT —————